Daily Meal Assistant - "What to Eat Today"

Objective

Develop an app that serves as a personal meal assistant, helping users track their available ingredients, suggest healthy recipes, and recommend nearby restaurants based on user preferences and current inventory. The app will combine advanced AI tools like object detection and large language models (LLMs) to provide tailored meal recommendations and route suggestions for dining out.

Features and Functionality:

1. **Ingredient Tracking:**
    - **Input:** Users upload photos of their fridge.
    - **Technology:**
        - Use **Object Detection APIs** or **LLMs** to recognize and identify ingredients from the uploaded images.
        - Create an **inventory database** of available ingredients for each user.
2. **Personalized Meal Suggestions:**
    - **User Input:** Example prompt - "I want to eat healthy food today"
    - **Response:**
        - The LLM will analyze the user's available ingredients and recommend low-calorie recipes.
        - Provide an **estimated cooking time** based on the complexity of the dish.
        - Use **Google Maps API** to search for nearby restaurants offering similar low-calorie dishes, including **distance** and **estimated cost**.
    - **Recommendation:**
        - Offer a **comparison of options**: whether to cook at home or eat at a restaurant.
3. **Execution Options:**

    If the user choose to:

    - **Cook at Home:**
        - Offer a **detailed recipe** based on the selected option.
        - Use the **YouTube API** to search for relevant cooking videos for guidance.
    - **Dine Out:**
        - Provide the **route to the restaurant** using Google Maps API, including navigation and travel time.
4. **Weekly Summary and Health Analysis:**
    - **Data Aggregation:**
        - Automatically track what users have eaten throughout the week, highlighting ingredient usage and food trends.
        - Identify **expiring ingredients** in the fridge to reduce food waste.
    - **Health Insights:**

        - Offer **health recommendations** based on the food consumed, including insights into calories, nutrition, and diversity in meals.
    - **Visualized Summary:**
        - Generate a **visualized poster** that highlights key metrics and trends in a fun and engaging way.

Technology Stack:

1. **Object Detection/LLM:** For recognizing ingredients from user-uploaded images.
2. **Google Maps API:** For restaurant recommendations and route planning.
3. **YouTube API:** For providing instructional cooking videos.
4. **Visualization Tool:** For generating weekly summary posters.
5. **Database:** To manage user data, ingredient inventory, and user preferences.

User Experience Flow:

1. **Step 1:** User uploads a photo of their fridge.
2. **Step 2:** App identifies available ingredients and stores them in the database.
3. **Step 3:** User asks for meal recommendations (e.g., "I want to eat low-calorie meals").
4. **Step 4:** App recommends recipes or nearby restaurant options based on preferences and ingredients.
5. **Step 5:** User chooses to cook or dine out, and the app provides relevant information (recipes or route).
6. **Step 6:** App tracks the user's meals and offers a weekly summary.

Value Proposition:

- **Convenience:** Users can manage their meal planning without worrying about what ingredients are available.
- **Health Focus:** The app provides tailored, healthy meal recommendations, helping users achieve their fitness goals.
- **Minimize Food Waste:** The app keeps track of expiring ingredients, ensuring nothing goes to waste.
- **Engaging Visuals:** Weekly summaries help users track progress in a fun, visual way.